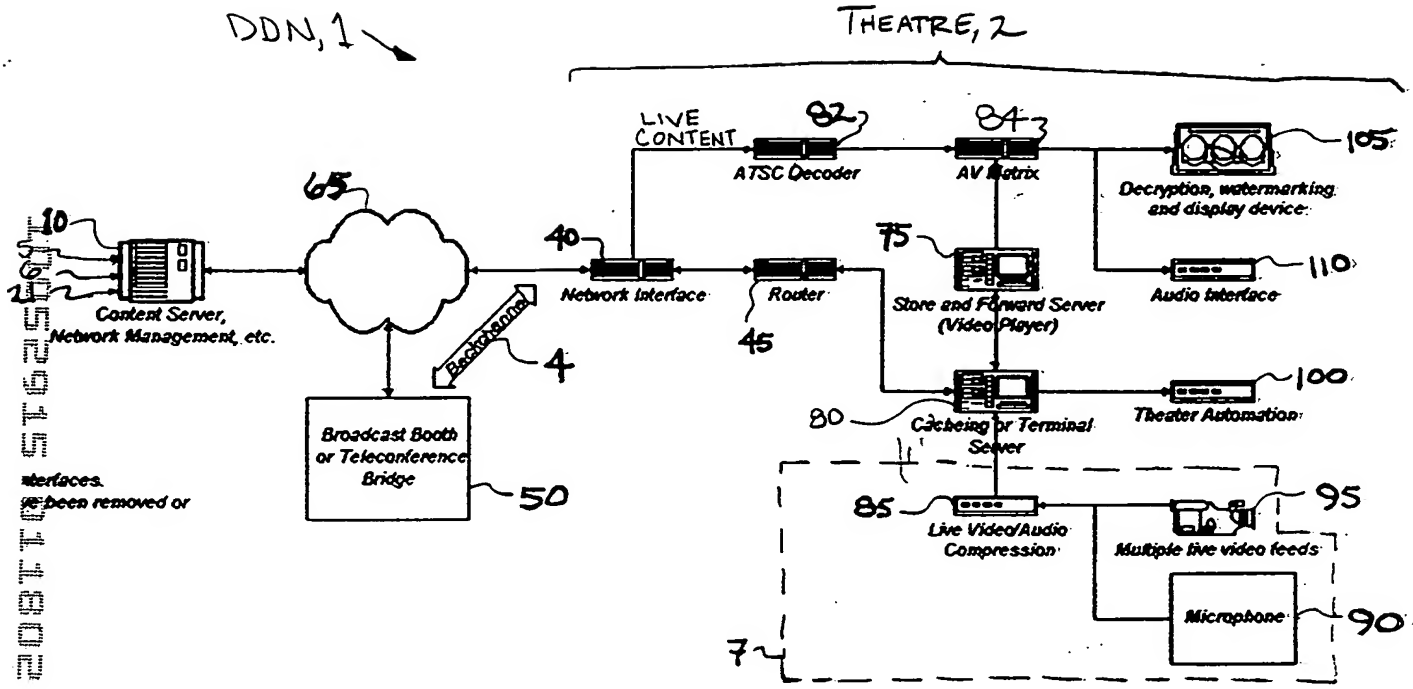
DDN, 1
THEATRE, 2
LIVE CONTENT
82
84
105
ATSC Decoder
AV Matrix
Decryption, watermarking and display device
65
10
40
75
Content Server, Network Management, etc.
Network Interface
Router
Store and Forward Server (Video Player)
Audio Interface
110
Backchannel
4
45
100
80
Caching or Terminal Server
Theater Automation
Broadcast Booth or Teleconference Bridge
50
85
95
Live Video/Audio Compression
Multiple live video feeds
Microphone
90
7

FIG. 1

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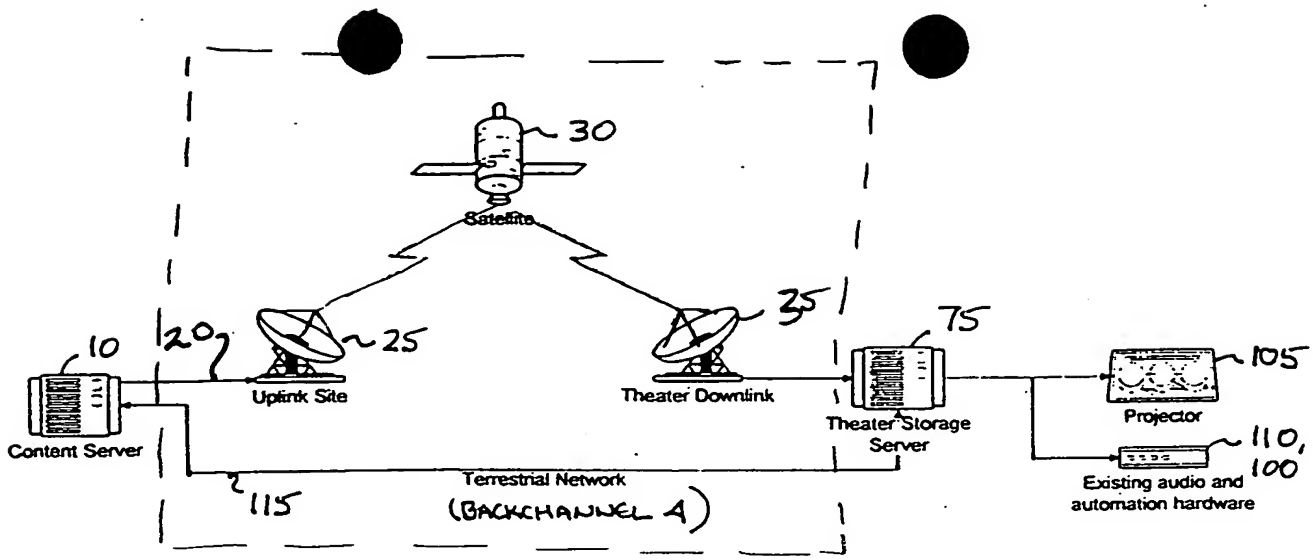

FIG. 2

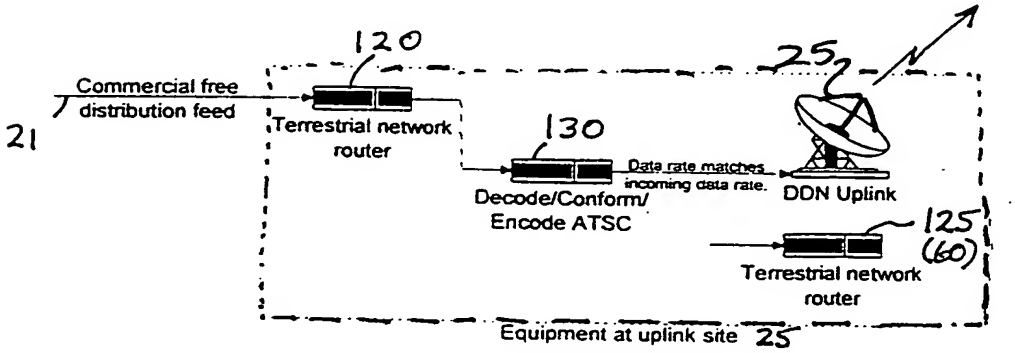

FIG. 3

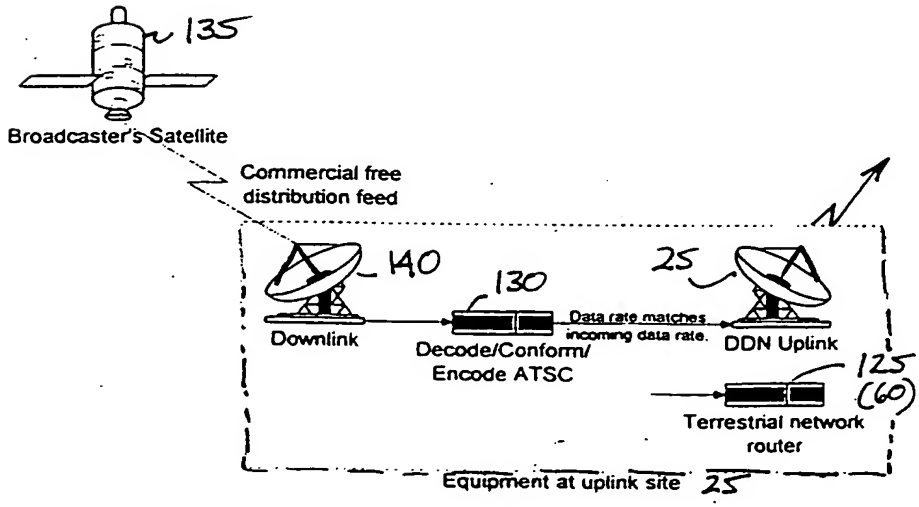

FIG. 4

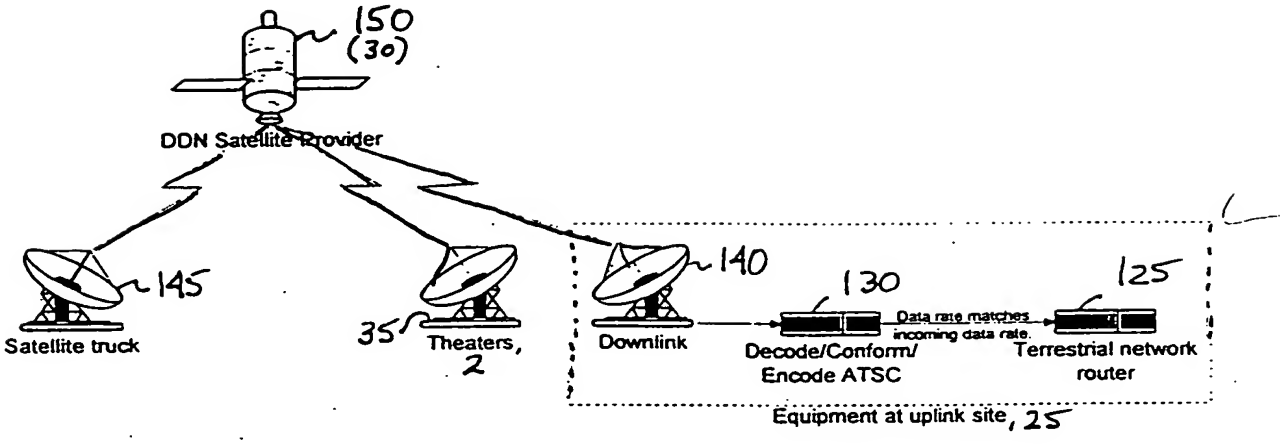

FIG. 5

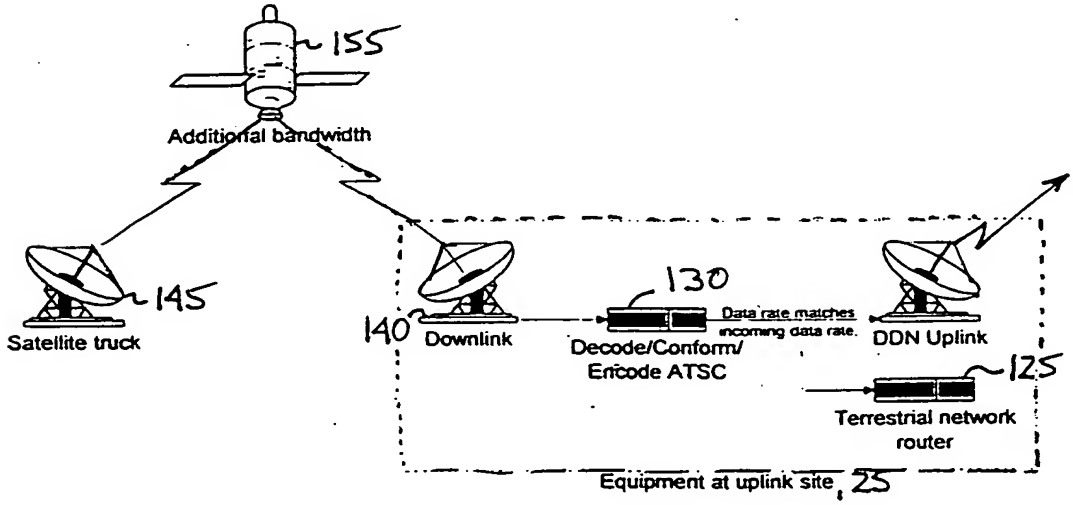

FIG. 6

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THEATRE EQUIPMENT DIAGRAM AND SIGNAL FLOW

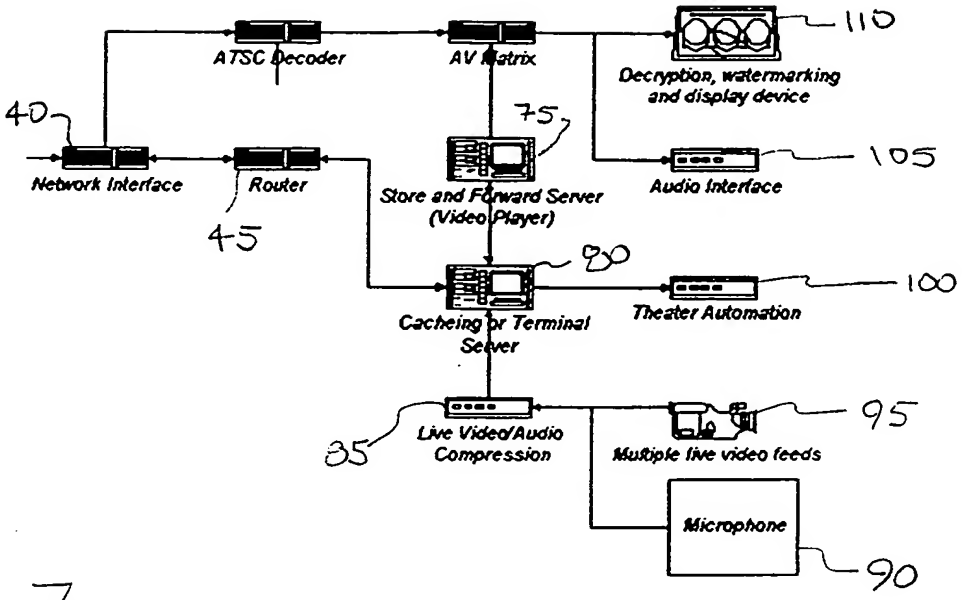

FIG. 7

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Teleconferences and one-directional video conferencing.

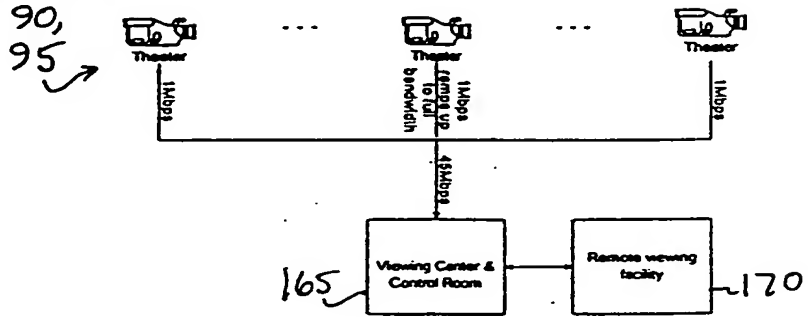

FIG.8

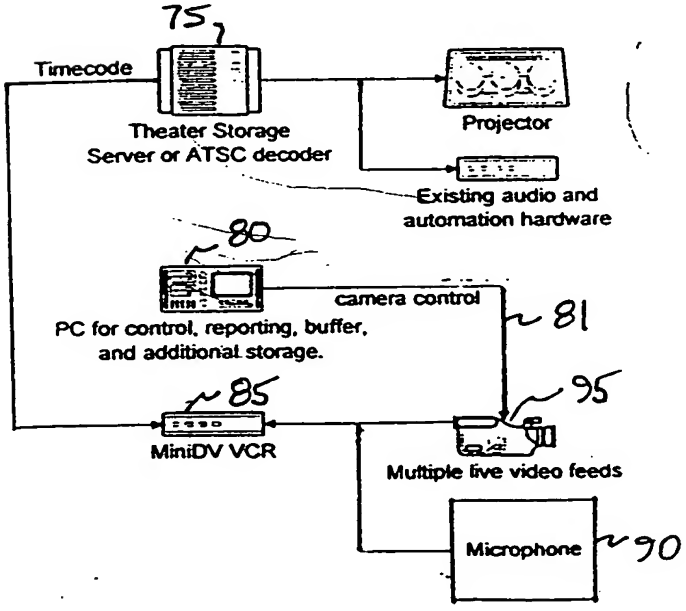

FIG.9

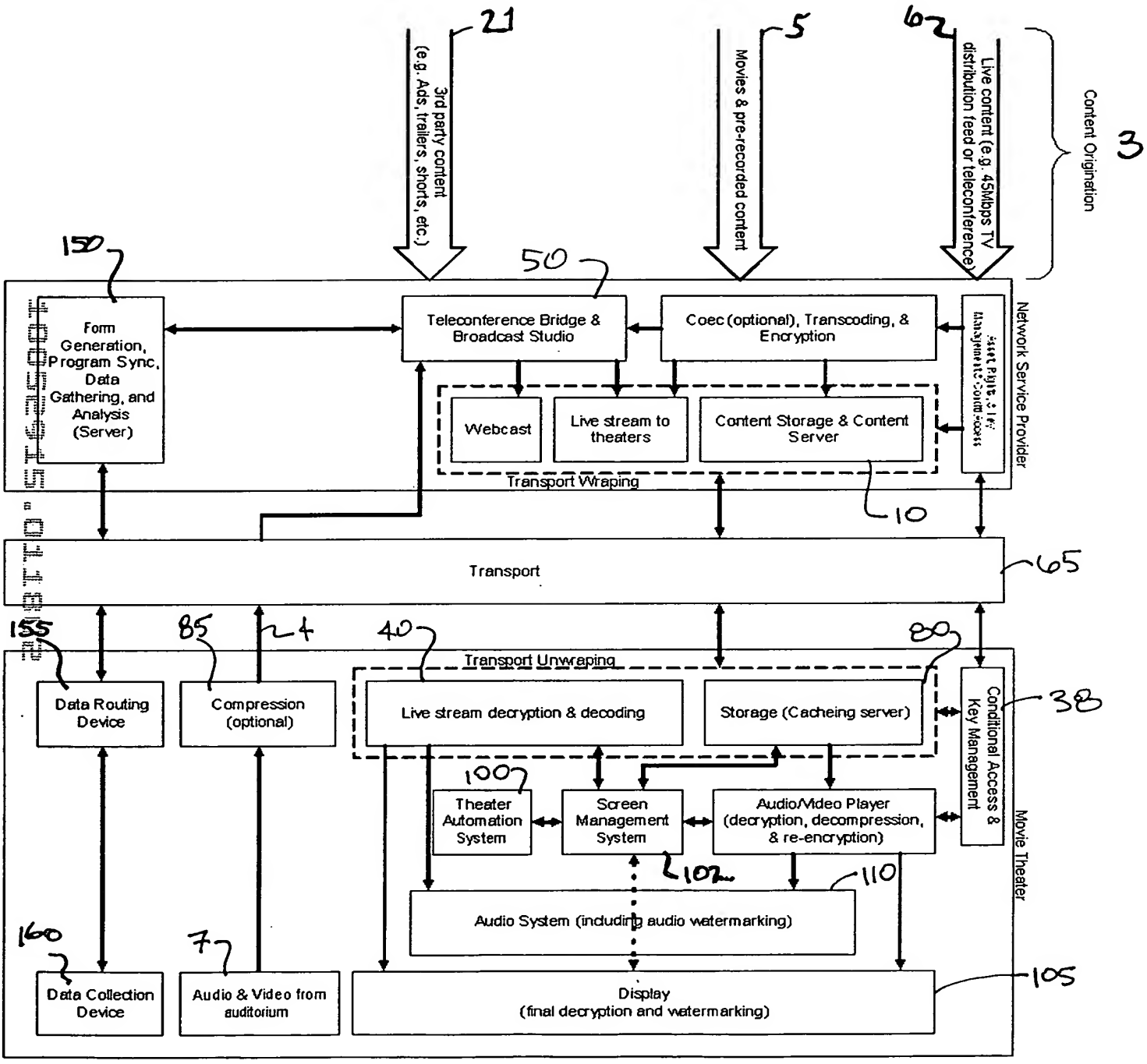
21
3rd party content (e.g. Ads, trailers, shorts, etc.)
5
Movies & pre-recorded content
62
Live content (e.g. 45Mbps TV distribution feed or teleconference)
Content Origination
3
150
Form Generation, Program Sync, Data Gathering, and Analysis (Server)
50
Teleconference Bridge & Broadcast Studio
Coec (optional), Transcoding, & Encryption
Webcast
Live stream to theaters
Content Storage & Content Server
Transport Wraping
10
Network Service Provider
Transport
65
155
85
24
40
Transport Unwraping
80
Data Routing Device
Compression (optional)
Live stream decryption & decoding
Storage (Cacheing server)
Conditional Access & Key Management
38
100
Theater Automation System
Screen Management System
Audio/Video Player (decryption, decompression, & re-encryption)
102
110
Audio System (including audio watermarking)
Movie Theater
160
77
Data Collection Device
Audio & Video from auditorium
Display (final decryption and watermarking)
105

FIG. 10

Sample Film Event Script

```
/* Sample theater server script
/* Film
/* 1) 13 Minutes to clean the theater
/* 2) 10 Minutes of advertising
/* 3) 7 Minutes of trailers
/* 4) 120 Minute film

begin(2000);

   shutter(close);                          /* Program starts at 8:00PM,
   hold(780);                                  film starts at 8:30PM
   shutter(open);                           /* Close shutter
   play(ads.scr, 0.5, 0.5);                 /* Wait 13 minutes

   hold(3);                                 /* Plays the file ads.scr with
   play(trailers.scr, 0.5, 0.5);               0.5 sec black fade in/out
                                            /* Hold at black for 3 seconds
                                            /* Plays the file trailers.scr
                                               with 0.5 sec black fade
                                               in/out
   shutter(close);
   play(film.scr, 0.5, 0.5);                /* Plays the file film.scr with
                                               0.5 sec black fade in.out
end;                                        /* End of script
```

FIG. 11

Sample Live Event Script

```
/* Sample theater server script
/* Live Event
/* 1) Open stream
/* 2) Fade up & display
/* 3) Fade out

begin(2000);

   shutter(open);                           /* Program starts at 8:00PM,
   play(ads.scr, 0.5, 0.5);                    live event starts at 8:05PM

   hold(3);                                 /* Plays the file ads.scr with
   play(trailers.scr, 0.5, 0.5);               0.5 sec black fade in/out
                                            /* Hold at black for 3 seconds
                                            /* Plays the file trailers.scr
                                               with 0.5 sec black fade
                                               in/out
   shutter(close);
   play(film.scr, 0.5, 0.5);                /* Plays the file film.scr with
                                               0.5 sec black fade in.out
end;                                        /* End of script
```

FIG. 12

6052515.04800

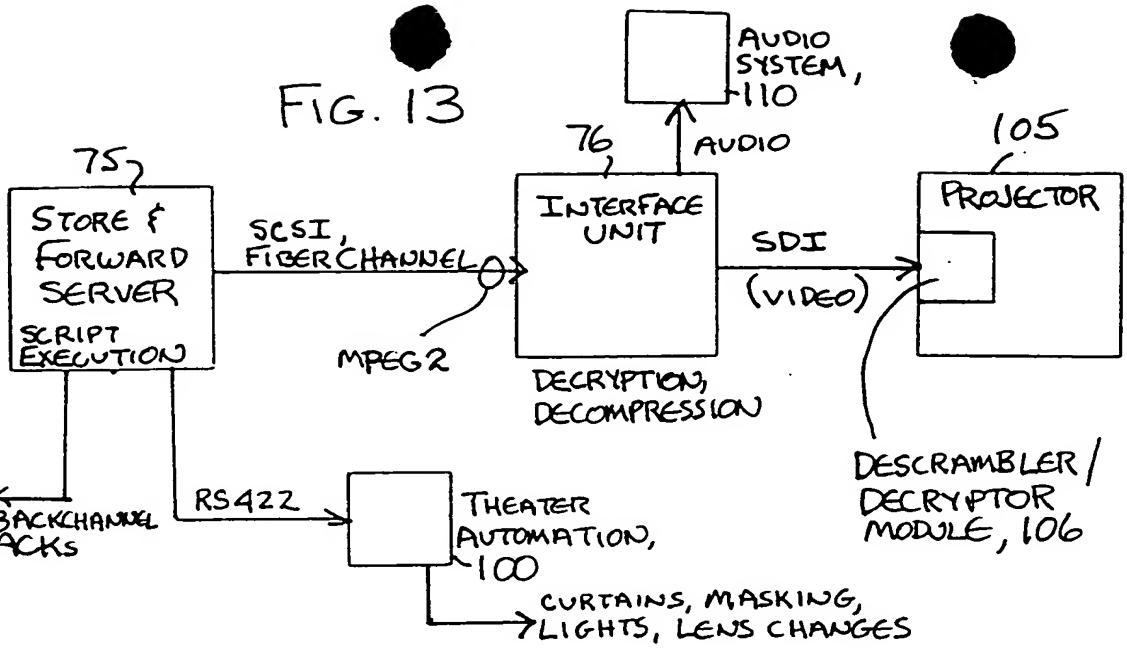

FIG. 13

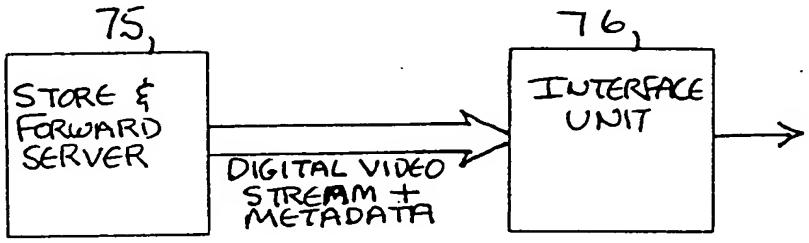

FIG. 14

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